The EpiNotes Newsletter

Public Health
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Cover: Mold spores (Courtesy of EPA Image Library)

Mold Dampness and Mold Growth in Buildings

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Occupational and Environmental Epidemiology Branch

Damp buildings are known to increase the risk of respiratory illnesses and allergies. Mold grows when contents and materials in homes and buildings become damp. The telltale signs of mold are visible growth and musty odor. Children, the elderly and people with compromised immune systems are more susceptible to the effects of mold than healthy adults. Preventive maintenance and prompt repairs of damp environments are the best interventions to prevent mold growth.

When mold growth become a problem, the first step is to locate sources of moisture and dampness. Moisture enters from the outside due to roof leaks, window leaks, poor grading and drainage, and during the summer, from the infiltration of hot and humid air. Mold growth is found indoors in and around condensate drains of air-conditioning systems, refrigerator drain pans and leaking pipes. Organic and porous building materials such as drywall, oriented strand board, insulation, and textiles (drapery and carpet) can trap moisture and are made of food sources that molds need to grow.

To restore a building with mold growth, sources of excess moisture must be corrected. Organic and porous materials that are damaged, decayed, or deteriorated cannot be cleaned and need to be removed and disposed of. Clothing, sheets or drapes may be laundered and dried. Use soap (detergent) and water to remove mold growth from non-porous, inorganic, or slightly damaged materials. The most important element in preventing mold growth after removal of damaged materials is to thoroughly dry the affected areas before repairs are made.

Laboratory testing for mold growth is not recommended by federal or state agencies. Testing does not provide the data needed to inform options and select actions. There are no standards for evaluating mold concentrations for health and safety.

North Carolina does not license mold inspectors and remediation contractors. There are third-party organizations that certify mold specialists, but the state has no oversight about specific requirements to obtain certification. If commercial assistance is needed, make sure that consultants and contractors have appropriate licenses, bonding and insurance. Ask for and check references. Ask about experience, knowledge, skills, and abilities to perform work in similar situations. Ask about awareness of government guidance and industry practices for mold remediation.

A written site-specific workplan and scope of work needs to be prepared before work begins. The plan needs to include common sense procedures that will be used to protect workers and non-impacted areas of the structure. A plan that includes quality control indicators that will be used and documented during and after work is complete can help to assure a successful project.

The goal of a mold remediation project is to restore the affected areas to a clean and dry condition. The *Principles of Healthy Homes* (National Center for Health Housing; nchh.org) are to keep homes dry, clean, properly ventilated, well -maintained, contaminant free, pest free and safe to promote health and wellbeing. *The Principles of Healthy Homes* offer multi-component and interactive interventions to prevent and control dampness, mold growth, and other indoor air pollutants.

References

For more guidance on home remediation for mold refer to: http://epi.publichealth.nc.gov/oee/a_z/mold.html. Also refer to the mold remediation figure on page 3, available at: http://epi.publichealth.nc.gov/oee/mold/docs/Mold_Moisture_Cleaning_Prevention_infographic.

It's a Moisture Issue: Moisture and Mold Cleaning and Prevention

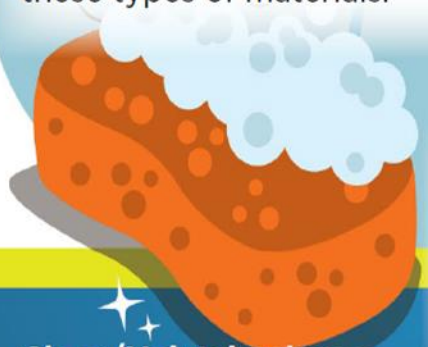
CLEAN

If you discover mold growing in the property, the following can be done to clean the mold:

HOW TO CLEAN MOLD

Identify and fix the source of the water/moisture that is causing the mold to grow.
Discard porous materials such as drywall, drapes, wood products, etc.

When dried, spores are more easily released from these types of materials.



Some items such as drapes, clothes, sheets, etc. can be cleaned to remove mold from them.

After these steps have been completed you can do the following:

Clean/Maintain places where moisture accumulates.

HVAC condensate drains, refrigerator drain pans, and toilet bowls are common places for mold to grow.

Check these locations to see if they need cleaning or maintenance to remove moisture/mold buildup.

Clean with soap and water before using disinfectants.

Increase ventilation to affected area to reduce dampness.

This can involve unblocking air pathways, running exhaust fans, closing windows, etc.

NC DPH/Epi/OEEB

New Rabies Post-exposure Management Guidance for Dogs and Cats.

By Marilyn Goss Haskell, DVM
Communicable Disease Branch

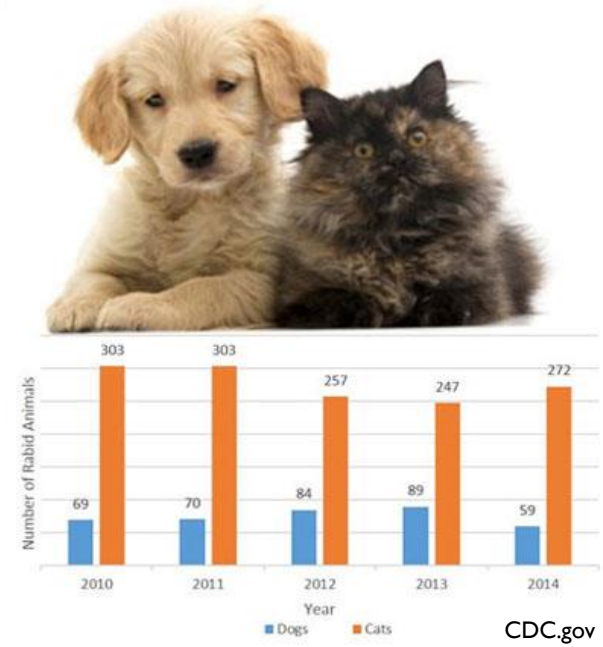
Introduction

The North Carolina Rabies Laws (G.S. 130A-184 – 204) are the basis for rabies prevention and control measures in North Carolina.[1] Rabies post-exposure management control measures for dogs and cats have remained essentially unchanged since the rabies laws were first codified in 1983. Under G.S. 130A-197 rabies-exposed dogs and cats fall into two post-exposure management categories: currently vaccinated or not. If the animal is not current at the time of the exposure, then it is subject to euthanasia or, if the owner is unwilling to euthanize and financially able, the animal could be placed in up to a six month quarantine.

Control measures and conditions are always at the discretion of the local health director. Recently, new national guidance was developed with more lenient control measures by the Rabies Compendium Committee of the National Association of State Public Health Veterinarians (NASPHV). This article discusses the rationale for the adoption of the new national control measures and the legal options available to local health directors. The new control measures are described in detail with some special considerations.

Rabies Vaccination Required

G.S. 130A-185, requires that every owner of a domestic dog, cat or ferret (four months and older) maintain the animal's rabies vaccination status up-to-date throughout the animal's entire lifetime. There are no legal waivers or exemptions. Owners should retain the original copy of the rabies vaccination certificate provided by the legally authorized vaccinator (G.S. 130A-189) at the time of vaccination, as legal evidence of the animal's vaccination status.



CDC.gov

Compendium of Animal Rabies Prevention and Control

On March 1, 2016 a new version of the NASPHV Compendium of Animal Rabies Prevention and Control was published. The NASPHV Rabies Compendium is the definitive guidance document for domestic animal rabies prevention and control in the U.S. The Compendium is used by CDC for determining recommendations for animals potentially exposed to rabies and rabies vaccination of animals; and is the primary source of reference for the North Carolina Rabies statutes, administrative code and the North Carolina Rabies Control Manual.[2, 3]

The new Compendium makes changes to post-exposure management recommendations for dogs and cats (with some new recommendations for ferrets) that are, for the most part, less restrictive than the existing standard of practice in North Carolina under G.S. 130A-197.[1, 2] To ensure that North Carolina rabies control laws remain consistent with current national recommendations, NC DPH recommends that local boards of health adopt the model Board of Health rule (Figure 1, page 6).

The 2016 Rabies Compendium Changes

The 2016 Rabies Compendium's new control measures for post-exposure management of dogs and cats are categorized by vaccination status as outlined below and in Table 1.[2] In each of the four vaccination categories below the exposed animal shall receive immediate veterinary care and a rabies vaccination with 96 hours of exposure.[2] The attending veterinarian and owner must notify the local health department immediately after the exposure or at the initial veterinary visit. The local health director shall determine the appropriate control measure to implement based on the animal's rabies vaccination status, timeliness of post-exposure vaccination with consideration of health assessments by the attending veterinarian.[2]

1**. Currently Vaccinated** - (a valid rabies vaccination certificate indicates that the dog, cat or ferret is current, vaccinated with a USDA licensed rabies vaccine at least 28 days prior to the exposure if the animal has received only one prior vaccine in its lifetime). Dogs, cats and ferrets should immediately receive veterinary care and be administered a booster rabies vaccine within 96 hours after the exposure; and be kept under the owner's observation* for 45 days.

2. **Unvaccinated** (never been vaccinated against rabies) - Unvaccinated dogs, cats and ferrets should be euthanized. If the owner is unwilling to euthanize, the animal should immediately receive veterinary care and be administered a rabies vaccine within 96 hours after the exposure and placed in strict quarantine. The strict quarantine period for dogs and cats has been reduced from six to four months. The strict quarantine period for ferrets remains six months due to a lack of data to support a change. Strict quarantine refers to confinement in an enclosure that precludes direct contact with people and other animals. [2]

3. **Overdue with Appropriate Documentation** (a valid rabies vaccination certificate or official veterinary record indicates the dog or cat was vaccinated with a USDA licensed vaccine at least once in its lifetime) - dogs, cats and ferrets should immediately receive veterinary care and be administered a booster rabies vaccine within 96 hours of exposure. Dogs and cats should be kept under the owner's observation* for 45 days. Previously vaccinated dogs and cats will mount a robust anamnestic response to a booster rabies vaccination despite being out-of-date.[5] Ferrets are treated as unvaccinated (see vaccination category 2) due to a lack of data to support a change.

4. **Overdue with NO Documentation** (no valid rabies vaccination certificate or official veterinary records of a prior rabies vaccination) – dogs, cats and ferrets should immediately receive veterinary care. They can be treated as unvaccinated and receive a rabies vaccination within 96 hours of exposure followed by a four month (dogs and cats) or six month (ferrets) strict quarantine. For dogs and cats, if the owner or guardian wants to avoid euthanasia or strict quarantine, the veterinarian may, in consultation with the local health director and the Communicable Disease Branch, use a prospective serologic monitoring (PSM) protocol to demonstrate whether the animal mounts an adequate immunologic response to a rabies vaccination. The PSM protocol schedule for vaccination and blood draws must be strictly adhered to. Ferrets are treated as unvaccinated (category 2) due to a lack of data to support a change.

*We recommend that during the 45 day observation period that the exposed animal be under the owner's strict supervision and control (leash walk, fenced yard, no travel or boarding unless approved by the LHD, no outings at doggie park or other parks, etc.). There should be no contact with animals or people other than the caretaker(s) until the local health director has released the animal from the 45 day observation period.

Special Considerations

The 2016 Compendium provides examples of situations and factors that may need to be evaluated on a case-by-case basis by public health officials and require implementation of more extended quarantine or observation periods. Furthermore, for exposed dogs and cats that are outdated with appropriate documentation (category 3) the strict quarantine period has been significantly reduced from 6 months to a 45 day observation period at the owner's home.[5] If there is a delay in vaccination of an animal beyond 96 hours of the exposure, the Compendium advises public health officials to consider increasing the quarantine period from 4 to 6 months and extending the 45 day observation period taking into consideration the following factors: severity of exposure, the length of delay in vaccination, epidemiology, number of previous vaccinations and animal health status.

Adoption of the model Local Board of Health Rule will provide local health directors with legal protection; the full force and effect of law (Figure 1). If managed and monitored carefully by local health departments, the new control measures will continue to maintain the safety of public health in North Carolina, while providing owners with more reasonable options for rabies-exposed dogs and cats, depending on the circumstance.

References

1. North Carolina General Assembly. North Carolina General Statutes. Chapter 130A. Available at http://www.ncga.state.nc.us/gascripts/statutes/statutelookup.pl?statute=130A. August 10, 2016.
2. National Association of State Public Health Veterinarians Rabies Compendium Committee 2016. Compendium of of Animal Rabies Prevention and Control, 2016. Available at http://www.nasphv.org/Documents/NASPHVRabiesCompendium.pdf. July 21, 2016.
3. N.C. Division of Public Health website. North Carolina Rabies Public Health Program Manual. Available at: http://epi.publichealth.nc.gov/cd/lhds/manuals/rabies/human.html. April 28, 2016.
4. CDC. Rabies. Available at http://www.cdc.gov/rabies/index.html. August 12, 2016.
5. Moore MC, Davis RD, Kang Q, et al. Comparison of anamnestic responses to rabies vaccination in dogs and cats with current and out-of-date vaccination status. *J Am Vet Med Assoc* 2015;246:205–211.

Figure 1. Rule for Post-exposure Management of Dogs and Cats
Recommended by the NC Division of Public Health

This model rule for rabies post-exposure management of dogs and cats implements and particularizes the authority given to the local health director in G.S. 130A-197 to effectively and efficiently protect the public's health utilizing the most current science. Accordingly, the _____ Board of Health adopts the recommendations and guidelines for rabies post-exposure management of dogs and cats specified by the National Association of State Public Health Veterinarians in the 2016 edition of the Compendium of Animal Rabies Prevention and Control (Part I. Rabies Prevention and Control B. Prevention and control methods in domestic and confined animals. 5. Post-exposure Management). These provisions of the Compendium shall be the required control measures pursuant to G.S. 130A-197.

Table 1. 2016 Rabies Compendium Changes for Post-exposure Management of Dogs and Cats by Vaccination Category Status: A Comparison to § 130A-197 and Estimated Fiscal Impact to Pet Owners

Rabies Vaccination Status of Dog or Cat	Current G.S. 130A-197 Control measures	2016 Compendium Control measures	2016 Compendium Financial Impact
1. Currently Vaccinated	Provide booster dose of rabies vaccine within five days of exposure ($25.00)	Immediate veterinary care with rabies booster dose within 96 hours of exposure ($25.00+). Owner observation 45 days.	Equal to existing standard
2. Unvaccinated (Has never been vaccinated against rabies)	A.) Euthanasia ($150.00) or B.) Immediate vaccination against rabies and place in six month quarantine ($25.00 + $3600.00)	A.) Euthanasia ($150.00) or B.) Immediate veterinary care with rabies vaccination within 96 hours of exposure and place in four month quarantine ($25.00+) + $2400.00)	A.) Equal to existing standard B.) $1200.00 less expensive
3. Overdue with Appropriate Documentation of prior rabies vaccination (at least one prior valid rabies vaccination certificate)	A.) Euthanasia ($150.00), or B.) Immediate rabies vaccination and place in six month quarantine ($25.00 + $3600.00)	A.) NA B.) Immediate veterinary care with rabies booster dose within 96 hours of exposure, keep under owner observation for 45 days ($25.00+)	A.) ~ $125.00 less expensive than existing standard (does not include emotional cost of pet loss). B.) $3600.00 less expensive
4. Overdue with NO Documentation of prior rabies vaccination	A.) Euthanasia ($150.00), or B.) Immediate vaccination against rabies and place in six month quarantine ($25.00 + $3600.00)	A.) Euthanasia ($150.00), or B.) Immediate veterinary care with rabies vaccination within 96 hours of exposure and place in four month quarantine ($25.00+) + $2400.00), or C.) Immediate veterinary care and Prospective serologic monitoring ($134.00 + $420.00 strict quarantine) IF evidence of prior vaccination then keep under owner observation for 45 days IF NO evidence of prior vaccination then manage as unvaccinated (category 2. euthanize or 4 month quarantine)	A.) Equal to existing standard B.) $1200.00 less expensive C.) $554.00 more expensive includes additional cost for strict quarantine until lab evidence finalized. Note this may obviate the need for either A or B above and, while a new expense, is considerably less expensive than either A or B above

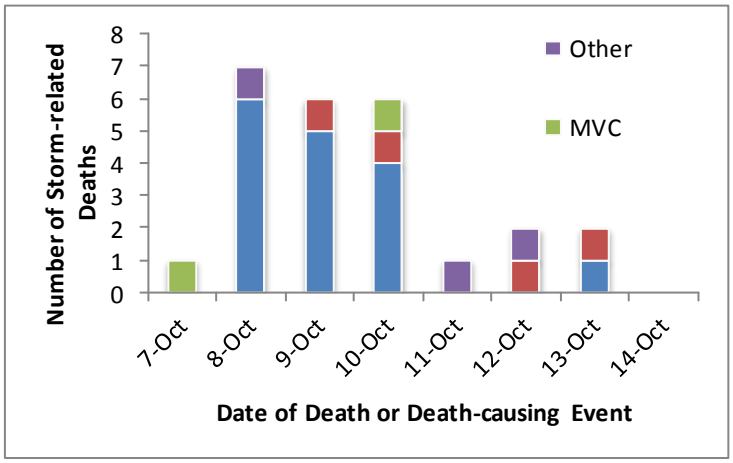
Note: All costs are approximate. Table is not meant to be all inclusive of all recommendations and costs but addresses the common situations with the most fiscal impact.
*Consult Communicable Disease Branch (919-733-3419) for specific guidance. Recommendations may be subject to change.

Hurricane Matthew flooding results in high mortality in Eastern North Carolina.

By Christine Mullarkey, Julie Casani, MD, Kimberly Clement, MPH and Aaron Fleischauer, PhD

Hurricane Matthew made landfall in southeastern North Carolina on October 7th as a Category 2 storm. The resulting rain contributed to severe flooding in many counties in Eastern North Carolina as rivers crested during October 9 through October 25.

The effects of the storm resulted in 28 storm-related deaths among residents of 14 counties. Nineteen (68%) casualties were drownings caused by motorists and their passenger(s) attempting to navigate flooded roadways. An additional four drownings occurred among pedestrians. While 23 (82%) deaths were a result of drownings, an additional two deaths were due to motor vehicle crashes, one was a medical event due to power failure, one was a storm-related injury and one resulted from a storm-related house fire. Seven deaths occurred during the height of the storm, but the majority of deaths occurred between days one and five after Hurricane Matthew's landfall in North Carolina (Figure).



Hurricanes: Be Aware and Prepare

By Julie Ann P. Casani, MD
Public Health Preparedness and Response

Editor's Note:

This article was written in September. On October 7, 2016, Hurricane Matthew made landfall in southeastern North Carolina. In the ensuing days, the Tar and Neuse Rivers rose above historic Hurricane Floyd levels and remained at flood levels until October 24th. At the peak of response, 66 counties had declared states of emergency in place, shelters were open in over 19 counties with over 3,000 people being sheltered. Now that recovery is underway, public health is engaged in environmental health issues including the assurance of wells and septic systems, providing recommendations and advice about indoor contamination and mold, providing guidance on mosquito control programs, and conducting private well testing at the State Laboratory of Public Health.

September was Preparedness Month and in North Carolina there is good reason why September is chosen. Of the 372 total storms that have significantly affected North Carolina since 1851, the majority have occurred in September.

The NC Public Health Preparedness system has numerous plans in place at the state and local levels to prepare for, respond to and recover from disasters of any hazard: weather related events, communicable disease outbreaks, and contaminating events. All of these plans depend on residents to have individual awareness and their own plans in place.

Important points for individuals to remember are that disasters and emergencies can happen at any time and a person may not be at home or with their family when it occurs. Government resources may take hours to respond. People may be responsible for themselves during that time and assumptions that your plans include may not be able to be implemented. For example, a parent may not be able to retrieve a child from school or daycare before needing to evacuate.

The effects of a disaster on a community may cause communications and power outages. Water and food may not be available or be safe. It may be difficult to get information on the scope and effect of the disaster. Transportation, including private vehicles, may be affected or impeded.

Sheltering may be necessary. If evacuation is required either because a person recognizes that the current location is unstable or public safety authorities recommend evacuation to shelters, shelters will be identified. The location of planned shelters is available from local planning agencies in advance of any disaster and people need to be aware of shelters near their homes, their work and points further away. The length of sheltering may vary depending on the disaster and the destruction. Many shelters also have accommodations for companion animals. Occasionally, a community may be advised to shelter in place when it is better to avoid uncertain or dangerous conditions outside.

How Does Someone Become Prepared?

Most importantly an individual can be prepared by being informed. Learning about the hazards in your communities: work as well as home and school, can provide information on the level of risk and what response measures may need to be taken. This information will be available from local Emergency Management agencies, city and county websites, home owners' associations, schools and insurance companies. Basic information on shelter locations, evacuation routes and rally points can assist with evacuation and family plans. Schools and daycare centers must have preparedness plans and will share them with parents and families.

A plan should include a communications plan, plans for transportation and a rally point, adaptations for individual special needs, and a kit. A communications plan includes not only the family's phone numbers but may include plans for connecting on social media or through other close friends and family. Facebook has stood up "Check in" pages during several events including the recent earthquakes in Ecuador and flooding in Louisiana. In a plan, a family can agree where they may meet if the home, work or school is evacuated even if communications systems are not available. Redundant alternative rally points may need to be identified in order to make accommodations for larger scale disasters.

Kits are commonly made for sheltering in place and for travel to evacuation locations or if stranded in vehicles. Kits can vary in their composition but should take into account basic food and water needs, flashlights, battery operated radio and medical needs such as eyeglasses, walking aids and medications. At least 1 days' worth of clean dry clothes may also be useful. A recently publicized family plan included the use of last year's back packs for each family member that is always ready, easily identified and is replenished each year school starts. Kits stored in a vehicle may include some heavier goods such as cans, batteries, blankets, personal care items, etc. Kits do not need to be extravagant nor expensive. Plans should also be practiced or exercised. Assumptions made around a table are frequently found to be faulty when trying to implement them in real life. Having a practice run of a family plan can actually reduce stress on children by providing information and security knowing a plan exists and giving children and all family members a chance to feel control over a frightening experience. And don't forget your pets!

There are many resources for planning and for use during a disaster. Readync.gov has an app that can be used on smart phones to give updates, shelter locations and overall advice. Here are some of our favorite videos:

Keep mayhem to a minimum: https://www.youtube.com/watch?v=MVLs8a-rqQQ&list=PLuWdQJ_3NUirp_HgHgiSMQ4JppFyORv8g&index=4

Your emergency communication plan: https://www.youtube.com/watch?v=eT58PMGp-ag&list=PLuWdQJ_3NUirp_HgHgiSMQ4JppFyORv8g&index=3

A family preparedness plan: https://www.youtube.com/watch?v=Q7xO4s6th4Q&list=PLuWdQJ_3NUirp_HgHgiSMQ4JppFyORv8g&index=2

During a disaster it is important for people to try not to become a part of the disaster but to respond, to survive and to recover. This is best achieved by being aware and being prepared.

Pictured from L-R: Drs. Davies, Williams, Evelyn Foust, John Peebles and Maillard

Employee of the Quarter:
Dr. Carl Williams

As the adverse effect of Zika virus infection on fetal brain development began to be recognized in December, 2015, internal and external partners naturally turned to Dr. Carl Williams, State Public Health Veterinarian, who in the Communicable Disease Branch is also in charge of activities to control the spread and impact of vectorborne (and foodborne!) diseases. Six months earlier, he had alerted close colleagues about the first 16 cases confirmed in Brazil. The observation of devastating effect to the fetus of women infected with Zika virus during pregnancy was soon followed by global effort to combat and prevent this infection and its vectors. In North Carolina, Dr. Williams is the lead public health professional in charge of this fight, which in addition to requiring coordination among several agencies, was compounded with the fact that the state had lost its mosquito control experts in 2011. Dr. Williams directed, facilitated and coordinated initiatives in the multiple domains of activity that are relevant for the prevention and control of Zika infection. Among these are efforts specifically centered on surveillance, reporting, diagnostic testing, communication to health professionals and to the public, mosquito control and action by the NC General Assembly. Dr. Williams performed in exemplary manner in leading the path for action and effectiveness to prepare North Carolina for the possible introduction of this new disease in the state, and to protect persons in North Carolina against this mosquito-borne infection.

In the 12 years Dr. Williams has been working for the state, countless public health interventions were led by or benefited from his high level of technical expertise, exemplary ethics, organizational skills and communicating and interpersonal talents. These are put into effect at the local, regional, state and national levels, and extend to the following disease groups: rabies and zoonotic diseases (along with Dr. Marilyn Goss Haskell); foodborne diseases (leading a team of 3 specialists with epidemiologic and nursing expertise, designing and conduct special epidemiologic and disease control investigations); and vectorborne diseases (supervising a nurse consultant, coordinating surveillance and control activities for tick-borne and mosquito-borne illnesses affecting persons in NC). All 3 of these disease groups are among those generating high level of activity and response, with annually over 3,000 calls on issues related to rabies control, over 3,000 case reports of foodborne disease, many of those associated with clusters or outbreaks, and over 500 vectorborne disease cases resulting from the review of over 3,000 events reported to the state.

In addition to the exemplary work performed by Dr. Carl Williams within the Communicable Disease Branch, the Epidemiology Section and Division of Public Health, his staff, colleagues and many varied health professionals across the state have often made a point to note how much they value working with him. This includes other sections and branches with the Division of Public Health, partners in the Department of Agricultural, Wildlife Commission, local health departments and academic institutions across the state. Dr. Williams models leadership within the Epidemiology Section by supporting and helping colleagues and staff daily, actively listening to all points of view, doing a lot of "homework and research" and greeting new challenges as new opportunities. During the last few months of preparing the Zika Response Plan, his hours have been many and his dedication to giving his best has never wavered. He leads by example. Through all of his actions as described above, he has shown that while hard work and expertise are highly valued within the Epidemiology Section, a zeal for taking on new challenges, and the ability to help others feel sincerely appreciated for their contributions and partnership are treasured.

NEWS and NOTES

Epi Section updates from around the State

Expanding Access to Hepatitis C Care in Rural Settings in North Carolina.

By Kimberly Psaltis, MPH, RN

In 2016, the Communicable Disease Branch launched the *NC Hepatitis C: Test, Link, Cure (TLC*) program in response to the increasing hepatitis C epidemic [1]. The program was developed to improve disease surveillance, increase screening guidelines adherence, increase testing for high-risk populations, link persons to care, and eliminate the transmission of disease. Of the approximately 3 million persons living with HCV infection in the United States, an estimated 38% are linked to care, 11% are treated, and only 6% achieve cure. With new direct acting antiviral (DAA) treatment regimens high cure rates can now be achieved. The new DAA treatment regimens can be prescribed by local primary care providers, physician assistants, and nurse practitioners, and often does not require a specialists However, access to primary providers with knowledge in HCV treatments is a current barrier.

The NC *Hepatitis C Academic Mentorship Program* is a dynamic telemedicine training program designed to increase access to specialty care in rural or difficult to reach locations. The program is designed to foster peer collaborations and establish referral networks through regularly scheduled mentorship meetings delivered by clinical specialists from the University of North Carolina Medical Center and Duke Medical Center. Providers enrolled in training will meet remotely by WebEx in small groups for approximately one-hour every other week. During that time, local providers will have the opportunity to present cases and receive guidance.

On October 27, 2016, 30 clinicians from 18 different organizations gathered at the Mountain Area Health Education Center (MAHEC) in Asheville, NC for a one-day training "boot camp" (photo). Providers gathered for trainings on hepatitis C care, liver staging, direct acting antiviral treatments, and guidelines for low resource settings. Leading the training were the program directors, two renowned experts in viral hepatology: Michael Fried, MD, Professor of Medicine, Director UNC Liver Center at UNC and Andrew Muir, MD Chief, Division of Gastroenterology, Department of Medicine at Duke University School of Medicine. Attendees will start implementing screening guidelines for hepatitis C in their clinical practice and begin remote tele-mentorship meetings in January 2017.

Rhea S, **Fleischauer A**, Foust E, Davies M. Hepatitis C in North Carolina: Two Epidemics with One Public Health Response. *N C Med J.* 2016; 77(3): 190-2.

NEWS and NOTES

Epi Section updates from around the State

Outbreak of Salmonella associated with cheese from a local creamery.

By Jess Rinsky, PhD and Erica Berl, DVM

In June 2016, the NC State Laboratory for Public Health alerted the Epidemiology Section about a cluster of Salmonella Typhimurium cases that looked genetically similar. An investigation was started to identify the source of the outbreak. Soon after the investigation began, *S.* Typhimurium, indistinguishable from the outbreak strain was isolated from a routine surveillance sample of raw milk from a local creamery.

In total, 109 cases occurred as part of this outbreak during April 14–August 24, 2016; 101 (93%) cases were in North Carolina residents and eight (7%) were in people who traveled to here in the week before becoming ill.

Among 46 ill persons interviewed, 26 (57%) reported eating cheese from the creamery. One type of raw-milk, aged cheese was most commonly reported by ill persons (N = 21; 46%) and a sample of this cheese was positive for the outbreak strain. The creamery produced and aged all cheese in an on-farm facility where multiple opportunities for cross-contamination were observed. The creamery voluntarily ceased production and recalled all products on July 27, 2016. Although no specific point of contamination was identified, epidemiologic, laboratory and environmental evidence indicates the creamery as the source of this outbreak. To protect public health, it is important to emphasize that small, artisanal food producers must maintain adequate controls during food production and storage to prevent product contamination.

Project ECHO… ECHO… ECHO…

By Jacquelyn Clymore, MS

The North Carolina Engagement in Care and HIV Outreach project (ECHO) was launched in 2016 in an effort to identify HIV patients currently out of healthcare and reengage them back into treatment. In order to accomplish this, both clinical and surveillance data from disparate data sources were combined to provide a clearer picture of the clinical status of people living with HIV (PLWH). An electronic, near real-time database, was developed to link data elements from multiple different databases to provide meaningful assessments of the health needs of PLWH in North Carolina. The data systems included in ECHO are:

- NC EDSS (surveillance of HIV RNA & CD4)
- eHARS (surveillance of HIV RNA & CD4)
- NC ADAP (data for medication use by AIDS Drug Assistance Program enrollees)
- NC CAREWare (services provided by Ryan White Parts A-D)
- MEDICAID (lab results and antiretroviral medication (ARV) claims data)

In 2015, viral load testing for PLWH became a mandated reportable condition (10A NCAC 41A .0101). Viral load and CD4 test results provide an indication of whether a PLWH is currently being managed by a healthcare provider.

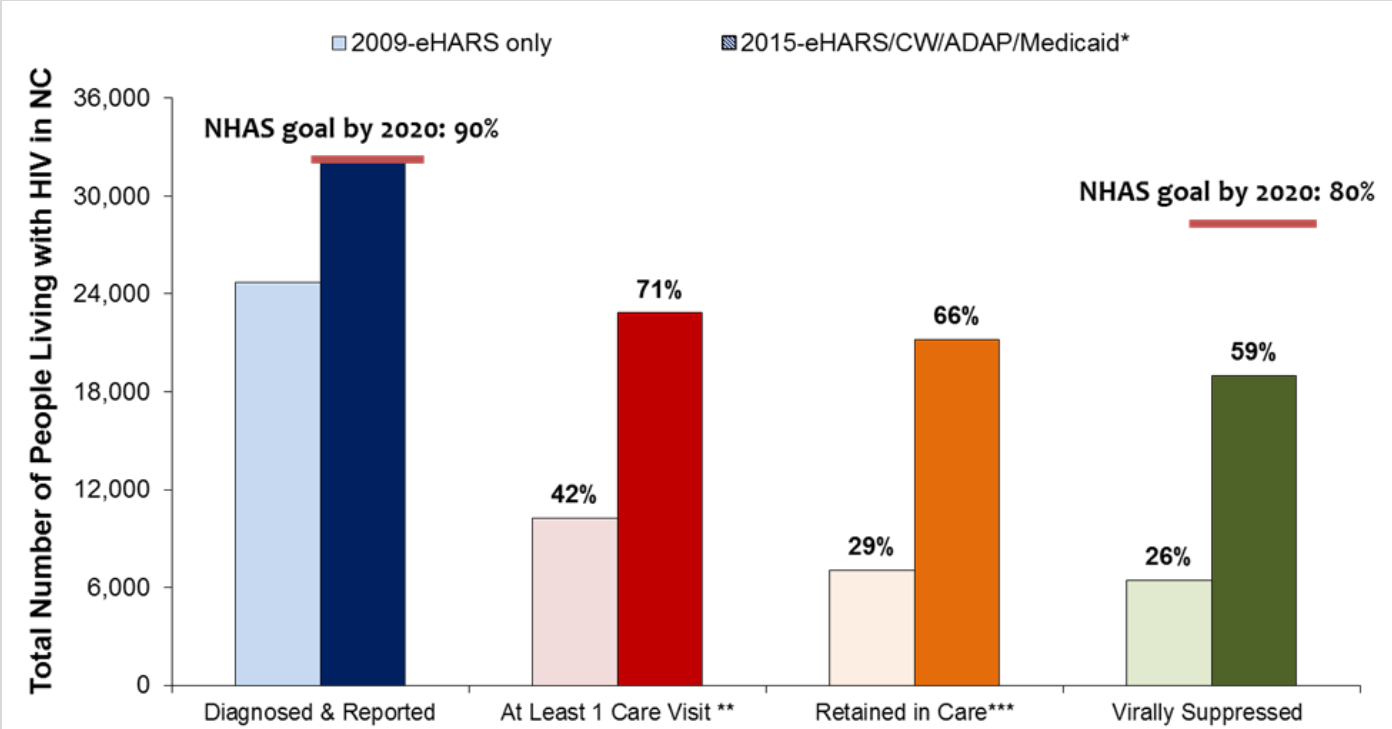
The major challenge for project ECHO has been data linkage across these disparate data systems. To overcome this issue, records from each data source are compared to the gold standard, the eHARS database. An automated logic algorithm was created to decide whether records in the other data sources match an eHARS record. Questionable matches are reviewed manually by the HIV Care epidemiologist. The combined result of this process is one record for each PLWH that contains ID numbers corresponding to each individual from all of the matched data sources. NC ECHO then links care information on each person from all of the incoming data sources. As a result, we are able to determine who has <u>not</u> had at least one healthcare visit in the previous year.

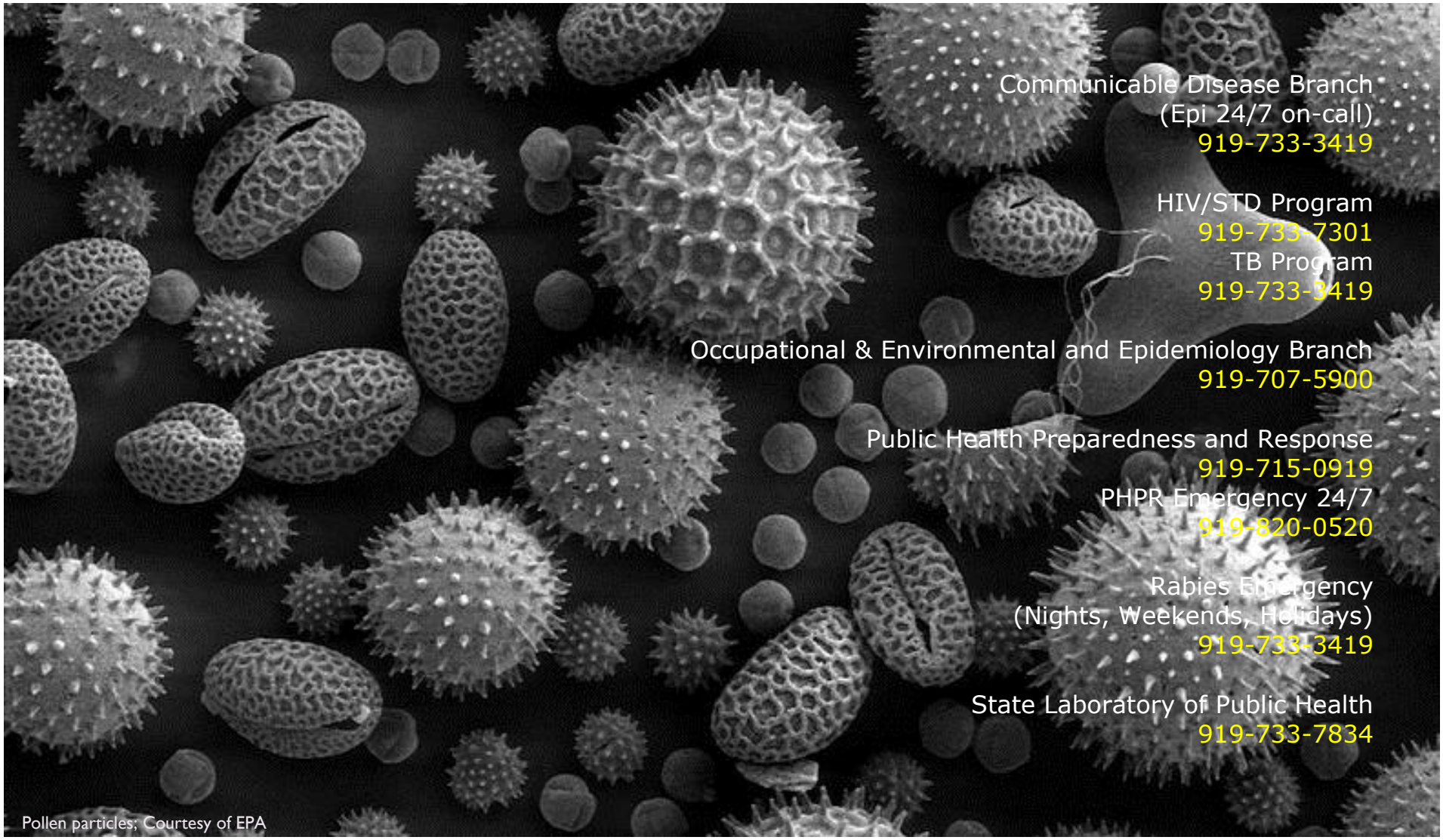
NEWS and NOTES

Epi Section updates from around the State

State Bridge Counselors (SBCs), whose role became to link and re-engage clients into care would not be responsible for informing people of an HIV diagnosis or for explaining control measures for which PLWH must comply. Instead SBCs would use NC ECHO to locate those clients who are out of care, and help them re-engage with medical care providers. Likewise, several clinics developed a process to identify clients who had missed appointments, calling them to reschedule and repeating these efforts if clients could not be found. If those clients are not located, their cases are turned over to regional or state bridge counselors, who could use NC ECHO for locating information and make further efforts to re-engage these client in care.

This graphic illustrates the HIV treatment cascade and the potential impact for project ECHO. Specifically, ECHO will be able to generate a list of clients who had at least one care visit in the previous year (red bars) but who are not currently retained in care (orange bars). Current estimates indicate that only 66% of PLWH are retained in care. The National HIV/AIDS Strategy (NHAS) has set specific HIV cascade goals to meet by 2020. North Carolina has met the goal to diagnose and report 90% of people living with HIV. NC ECHO will be an important tool to meet these goals including an 80% viral suppression rate by 2020 (we are currently at 59%).





Pollen particles; Courtesy of EPA

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